Bearing wear is a significant contributor to the maintenance cost and downtime of modern gas turbines. Buried deep within the engine, bearings are difficult to monitor with the usual methods. By taking traditional wear-debris analysis techniques to a higher level of intelligence, JetSCAN® delivers fast, consistent, accurate and timely warning of impending bearing failures.

The power of JetSCAN®
JetSCAN® combines powerful analytical, data-interpretation and trending tools within a single, turnkey unit. Its strength is its ability to determine the condition of oil-wetted engine components and identify impending failures. Acting on that insight enables you to significantly reduce or even eliminate the risk of in-service failures.

Advanced scanning electron microscope and energy-dispersive X-ray technologies are used to analyse samples collected at regular intervals from magnetic chip detectors and oil filters.

Embedded expert knowledge of the engine design is then applied, enabling JetSCAN® to deliver a full evaluation and interpretation of the analytical data and a “fly / no fly” recommendation.

JetSCAN® is able to differentiate between benign anomalies and conditions that require action. That significantly reduces the need to remove engines for inspection, avoiding expense and downtime.

Proven in use
JetSCAN® is in use by 14 air forces worldwide, including the United States Air Force, the United States Navy, the United States Marine Corps, and the Royal Air Force. Successful outcomes reported by customers include:

- Eliminated class “A” mishaps due to bearing or bearing-related failures
- Reduced non-recoverable in-flight shutdowns to zero
- Doubled time interval between inspections

PROVEN SOLUTION
Eliminates bearing-related engine failures
JetSCAN® advanced failure prevention minimises your risk and reduces your maintenance costs.

JetSCAN® is a self-contained, automated analysis system that combines scanning electron microscope and energy-dispersive X-ray technologies with custom-designed diagnostic software. It monitors wear debris collected on magnetic chip detectors and filters and develops characteristic physical and chemical data for each individual particle. The data is stored in the system’s integral database.

Benefits realised with JetSCAN®

- High level of accuracy in identifying impending bearing-related failures
- Significant reduction of in-flight events
- Increased aircraft availability and operational readiness
- "Definitive" laboratory answer available quickly at organisational / intermediate or depot level
- Multiple engine type analysis capability on single JetSCAN® system
- Requires no specialised knowledge or experience to operate

JetSCAN® features

- Individual chemical analysis of all debris particles
- Fast and intelligent filtering; analyses only particles of interest
- Complex dimensional measurement of all particles, including size, shape, form and structure, surface roughness and more
- Full, engine-specific risk assessment logic applied to data interpretation
- Automatically-generated diagnostic summary and detailed reports
- Simple user control and pre-run calibration / repeatability checks
- Fast response with accurate results
- High-impact case with integrated wheels, handles and fork-lift points for easy deployment
- Applicable for both fixed-wing and rotary-wing aircraft
- Fast, easy physical set-up
- Wide environmental tolerances
- Built-in self-inspection and diagnostic capabilities

JetSCAN® offers the fast, objective and expert solution for condition-based wear debris monitoring.

Reduce failure risk and cost and increase your aircraft’s operational availability with JetSCAN®

JetSCAN® was jointly developed with Carl Zeiss SMT. JetSCAN® is a registered trademark of Carl Zeiss SMT.